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TM

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/849,875	06/18/97	LARSEN	D CU-1561JJC

LM12/0804

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EXAMINER	
LEE, C	
ART UNIT	**PAPER NUMBER**
2733	7

DATE MAILED: 08/04/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

Office Action Summary

Application No.	Applicant(s)
08/849,875	Larsen et al
Examiner	**Group Art Unit**
Andrew Lee	2733

☒ Responsive to communication(s) filed on *Jun 8, 1999* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-45* is/are pending in the application.

Of the above, claim(s) *17-45* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-16* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *3*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of claims 1-16 in Paper No. 6 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over . Spiegel et al U.S. Patent No. 5,649,108.

Re Claim 1, Spiegel et al teaches a method of transmitting message data from an originating station (A) to a destination station (0) in a network comprising a plurality of stations (A to 0), the method comprising:

monitoring, at the originating station (A), the activity of other stations (A to 0) in the network (see col 1, lines 38-54); and

transmitting the message data to at least a first intermediate (B) station for onward transmission to the destination station (0);

and in that each station (A to 0) in the network monitors the quality of the signal path to other stations and in that the selection of the first intermediate station (B) by the originating station (A) and the selection of any further intermediate stations (I,M) by the first or a subsequent intermediate station is made opportunistically, at the time of the transmission of the message data, according to predetermined criteria including the monitored quality of the signal path between the transmitting station and potential intermediate stations, so that transmissions take place during peaks of opportunity (see col 2 lines 33 +).

Spiegel et al fails to explicitly teach the step "*characterised in that the method further comprises the step of transmitting confirmation data back from the first intermediate station (B) to the originating station (A), indicative of the onward transmission of the message data*". However, Spiegel et al teaches that the source node make selection of routes through the response of the NACK packet from the adjacent node (see col 4, lines 30 +). Although the

confirmation message is a negative response to the connection request, it would have been obvious that a positive ACK would have transmitted in response to a transmitted data in the adjacent node. The motivation would have been to conserve bandwidth. If no positive confirmation of the prospective path was receive, the source node would wasted bandwidth by searching for alternate routes. Therefore, it would have been obvious to one skilled in the art to have incorporated the positive ACK into the teaching of Spiegel et al.

Re Claim 2, Spiegel et al further teaches a method according to claim 1 wherein each station in the network monitors the activity of other stations on an ongoing basis in order to determine the availability of those other stations, according to predetermined criteria, as intermediate or destination stations (predetermined criteria refer to the QoS).

Re Claim 3, Spiegel et al further teaches a method according to claim 2 wherein the monitoring is carried out by receiving data transmitted by the other stations, and analysing the received data transmissions to select an intermediate or destination station (See fig 7A-7D).

Re Claims 4-6, Spiegel et al a method according to claim 3 including extracting information from the received data indicating at least the identity of the other stations (see fig 3).

4. Claims 7 , 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel et al U.S. Patent No. 5,649,108 and Hughes et al U.S. Patent No. 5,357,507.

Spiegel et al teaches a decision step 42 to determine which to use the originating or combined (originating and progressive) routing control depending on the QOS parameter of the connection request packet. If the QOS parameters indicate that fast connection establishment is important, the combined routing control is selected and if the parameters indicate that a connection is to be established quickly the originating routing control is selected. If the originating routing control is selected, the control flag is set in the flag field 38 of a connection setup packet at step 43. If combined routing control is selected, control branches at step 42 to step 44 to set a cost threshold and a crankback limit into the corresponding fields 36 and 37 of a connection setup packet and the control flag is set in the flag field 38 of that packet (step 45). Spiegel et al fails to explicitly teach the parameters to indicated the received data relating to the propagation delay of each message, the data rate of each message and/or the volume of messages between any two or more stations. However, Hughes et al teaches in a switch onto a single resource of capacity C bits per second (bps). This capacity relate to a physical quantity such as a link capacity, or a virtual quantity such as a virtual path (VP) bandwidth allocation. Because the aggregate incoming traffic can exceed the outgoing capacity C, some of the traffic must be discarded resulting in cell loss. Among many indicators, e.g. cell delay, cell jitter etc., the cell loss is the most important **QOS indicator** with respect to connection admission. In order to make a connection admission decision some model of the system must be employed in order to derive a measure indicative of a predicted cell loss probability. The measure is based on traffic descriptors (parameters) for each call which the user declares at each call set-up. Burst traffic can be modelled as on-off traffic and

described by three parameters; peak rate, mean rate and burst length. A measure based on the bufferless multiplexer model is simply calculated by two parameters of peak rate and mean rate which are easy for a user to declare and for the network to enforce. The motivation for combining is to provide reliability. Therefore, it would have been obvious to one skilled in the art to have combined the teaching of Hughes et al into the teaching of Spiegel et al.

5. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel et al U.S. Patent No. 5,649,108. and Kudo U.S. Patent # 5,278,830.

Spiegel et al fails to explicitly teach "claim 8, a method according claim 3 wherein data transmitted by each station includes time data, the monitoring including *determining the age of data transmissions received from other stations in the network and discarding data transmissions older than a predetermined age*; claim 9, method according to claim 8 including *comparing the time data in the received data transmissions with a reference time*, and discarding the received data transmissions a predetermined period after the reference time;

However Kudo teaches the packet staying counters counting the numbers of packets staying the respective data buffer memories of diferent classes (*allocating a priority to received data transmissions)*. Kudo further teaches the discarding function(*discarding data transmissions older than a predetermined age)* that controls the number of packets staying in the buffer memory of different classes dependent on the excess of a predetermined value. Kudo teaches that the reasoning for the discarding function is to control overflow in the buffer. The motivation would

have been to control overflow. Therefore, it would have been obvious to one skilled in the art to have incorporated the teaching of Kudo in the teaching of Bertin et al.

6. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel et al U.S. Patent No. 5,649,108 and Kudo U.S. Patent # 5,278,830 as applied in Claims 9 and 10 and further in view of Ben-Michael et al U.S. Patent # 5,404,353.

Re Claim 10,Spiegel et al and Kudo fail to explicitly teach claim 10 including *allocating a priority to received data transmission, and adjusting the order of retransmission* of the received data transmission to other stations according to the age thereof. However, Ben-Michael et al teaches the dynamic adjustment of network protocol parameters used in the target network to either guarantee successful retransmission or deny priority to the target network in the event of a congestion. The motivation would be to flow control during congestion. Therefore, it would have been obvious to one skilled in the art to have incorporated the teaching of Ben-Michael et al into the teaching of Bertin et al and Kudo.

7. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel et al U.S. Patent No. 5,649,108 and Berland U.S. Patent # 5,509,050.

Spiegel et al teaches path selection process which detemines the best way to allocate network resources to connections both to guarantee that user QOS requirements are satisfied and also to optimize the overal throughput of the network. Spiegel et al fails to explicitly Path selection process for a wireless packet communication as disclosed in claim 15, a method according to claim 13 wherein the parameter which is adapted is one or more of the data rate,

transmission power, *transmission frequency*, *transmission or reception antenna*, message length, message priority, message time to live, time of transmission, and *message retransmission rate*. However, Berland teaches a wireless packet communication system wherein the information packet speed can vary depending on the current radio propagation characteristics and may be renegotiated during a link connection (see col 6, lines 10-24). The motivation for providing wireless characteristics parameter would have efficient use of the bandwidth during the renegotiation process. Therefore, it would have been obvious to one skilled in the art to have wireless parameters as taught in Berland into the Topology database of Bertin et al.

8. Inquiry concerning this communication or eariler communications from the examiner should be directed to Andrew Lee whose telephone number is 703)305-1500. The examiner can normally be reached on Monday-Friday from 8:30 AM - 6:00PM, Eastern Time. If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, **Mr. Jason Chan**, can be reached on 703)305-4729.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, DC 20231or faxed to:

(703) 308-9051, for formal communications intended for entry **or** (703) 308-6743,

for informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**.

Hand-delivered responses should be brought to: Crystal Park II, 2121 Crystal Drive, Arlington, Virginia Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703)305-3900.

Andrew Lee

July 19, 1999

HUY D. VU
PRIMARY EXAMINER